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GREEN WEIGHT, VOLUME, BOARD-FOOT, AND CORD TABLES FOR THE MAJOR SOUTHERN PINE SPECIES

by

JOSEPH R. SAUCIER, DOUGLAS R. PHILLIPS, and JAMES G. WILLIAMS, JR.

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GREEN WEIGHT, VOLUME, BOARD-FOOT, AND CORD TABLES

FOR THE MAJOR SOUTHERN PINE SPECIES

by

JOSEPH R. SAUCIER, DOUGLAS R. PHILLIPS, and JAMES G. WILLIAMS, JR.

FOREWORD

Purchasing timber by weight has rapidly increased the past few years and is the most commonly used method for determining volume for pine species. There are a number of reasons why the volume of wood is determined by weight. Whole tree and tree length logging is on the increase. There is a market for the total tree in many areas of the State. The market for fuel wood has added to the total tree value since the stems and branches can also be utilized in whole tree chipping operations.

This weight study deals with four pine species; shortleaf, loblolly, slash, and longleaf. The research data covers the natural range of growth for each of the pine species. The study includes sample trees of total tree green weight and green weight to 4-inch, 7-inch, and 9-inch diameter outside bark tops. The weight is converted to board feet or cords by diameter classes.

The Forestry Commission was pleased to assist three scientists of the Southeastern Forest Experiment Station, U.S. Forest Service, in making the study. This study will assist forest landowners, consultants, loggers, and buyers of timber where weight is used to measure wood volume.

RAY SHIRLEY, DIRECTOR
GEORGIA FORESTRY COMMISSION

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INTRODUCTION

Timber in the South, particularly the pine species, is increasingly purchased by weight. We view this as a progressive step with potential benefit to both buyer and seller. But, because timber is now commonly harvested tree-length and later separated into products, purchase offers can and are being made in tons, cords, cubic feet or board feet and the seller is often unable to compare purchase offers.

Recognizing the need for greater understanding of timber measurement and its conversion from one unit to another, and secondly, because the total tree is now a salable product, the Georgia Forestry Commission in cooperation with the U.S. Forest Service, Southeastern Forest Experiment Station, undertook a study to develop reliable weight, volume, board-foot and cord tables for the major southern pine species by product classes including fuelwood.

The four species, loblolly, shortleaf, longleaf and slash were sampled in natural stands at representative locations within their natural range (figure 1). Loblolly was sampled at 13 locations throughout the State, shortleaf at 7 locations in North Georgia, longleaf at 8 and slash at 6 in South Georgia. A species sample at one location consisted of selecting five trees from each 2-inch diameter class from 6 to 18 inches d.b.h. for a total of 35 trees per species per location whenever possible.

When field sampling was completed, a total of 1,157 trees had been felled, measured in detail, and weighed by product classes from 15 locations in the State.

This study was conducted to provide landowners, service foresters, consultants and industry the tools necessary to evaluate timber in several units of measure, be they pounds, cords, cubic feet or board feet, and to compare their conversion results. For convenience to the user, this report consists of a series of yield tables for each species which are indexed and numbered. The equations and variables used to construct the tables are listed with each table.

HOW TO USE THE TABLES

Use of these weight, volume, board-foot and cord tables requires a cruise of the timber to be bought or sold where measurement of the tree dimensions of diameter at breast height (d.b.h.) and total height by species are recorded. These data are then summarized to obtain a tree count distribution by d.b.h. and height classes. This distribution of number of trees per size classification of diameter and height can then be used for all tables of a given species to determine a variety of information.

For example, suppose the cruise produced a tally of 10 loblolly pine trees 12 inches d.b.h. and 80 feet in total height, among other trees. Applying these data to Table 5, we find that these 10 trees have a total weight of 20,480 pounds ($2,048 \times 10$) and provide an estimate of their yield if they were total-tree chipped.

If these trees, when harvested, were tree-length logged, their estimated yield of stem material to the 4-inch d.o.b. top would be 16,660 pounds ($1,660 \times 10$) from Table 6.

If, on the other hand, these trees were to be harvested in short-log form or if there is an interest in how much saw-log material the tree-length logs contained, application of the data to Table 7 shows that the 10 trees would yield 14,710 pounds of saw-log material to the 7-inch d.o.b. top. Applying these data to Table 13, we find that this same quantity of saw logs will yield 1,080 board feet of lumber (Scribner scale). And from Table 15 we find that for every 1,000 board-foot yield from trees 12 inches d.b.h. and 80 feet in total height, there are 1,746 pounds of pulpwood material between the 7-inch d.o.b. top and the 4-inch d.o.b. top. For the 10 loblolly trees, the pulpwood yield from this portion of the stem would be 1,886 pounds.

If the 10 trees in this example were harvested for pulpwood, utilizing the stem to the 4-inch d.o.b. top, Table 16 shows that the yield would be 3.14 cords ($.314 \times 10$). Further, the remaining logging residue that could be utilized as fuel can be estimated from Table 9, which in our example totals 3,890 pounds (389×10).



Figure 1. Study location where trees 6 to 18 inches dbh of the four major southern pine species were measured in detail and weighed by product classes. Total samples 1,157 trees.

OBSERVED WEIGHT OF STUDY TREES

Table 1.--Observed average green weight of total tree and stem components for loblolly pine in Georgia

D.b.h. class (inches)	Trees sampled	Component			Total	
		Merchantable top 9-inch	7-inch	4-inch	Stem	Tree
		-Pounds-				
Number						
6	65	--	--	219	279	330
8	64	--	286	547	591	693
10	65	401	758	994	1,031	1,217
12	66	1,029	1,368	1,515	1,548	1,859
14	65	1,810	2,045	2,160	2,190	2,624
16	66	2,687	2,855	2,952	2,981	3,606
18	57	3,503	3,633	3,724	3,755	4,616

Table 2.--Observed average green weight of total tree and stem components for shortleaf pine in Georgia

D.b.h. class (inches)	Trees sampled	Component			Total	
		Merchantable top 9-inch	7-inch	4-inch	Stem	Tree
		Pounds				
Number						
6	35	--	--	215	272	309
8	35	--	334	539	578	659
10	35	490	811	1,016	1,043	1,194
12	35	1,019	1,331	1,460	1,486	1,751
14	35	1,894	2,107	2,209	2,231	2,614
16	31	2,694	2,844	2,926	2,948	3,503
18	22	3,736	3,888	3,970	3,994	4,860

Table 3.--Observed average green weight of total tree and stem components for longleaf pine in Georgia

D.b.h. class (inches)	Trees sampled	Component			Total	
		Merchantable top 9-inch	7-inch	4-inch	Stem	Tree
Number		Pounds			--	
6	40	--	--	254	316	382
8	40	--	356	583	628	766
10	39	464	805	1,039	1,083	1,298
12	40	1,123	1,425	1,573	1,613	2,010
14	41	1,797	2,016	2,132	2,162	2,769
16	40	2,701	2,866	2,979	3,010	3,835
18	33	3,557	3,700	3,795	3,824	5,048

Table 4.--Observed average green weight of total tree and stem components for slash pine in Georgia

D.b.h. class (inches)	Trees sampled	Component			Total	
		Merchantable top 9-inch	7-inch	4-inch	Stem	Tree
Number		Pounds			--	
6	30	--	--	221	282	329
8	30	--	290	550	600	699
10	30	452	759	986	1,032	1,220
12	30	1,063	1,410	1,566	1,605	1,931
14	30	1,797	2,015	2,128	2,161	2,660
16	30	2,605	2,771	2,872	2,904	3,627
18	28	3,637	3,774	3,863	3,896	4,824

SECTION I

LOBLOLLY PINE YIELD TABLES



Table 5.--Predicted green weight of total tree (wood, bark, and foliage)
for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds</u> ^{2/}							
6	247	311	375	440	504			
7	340	427	515	602	690			
8	447	561	676	790	904			
9	568	713	858	1,003	1,147	1,292		
10	704	883	1,062	1,240	1,419	1,598		
11	854	1,071	1,287	1,503	1,719	1,936		
12	1,019	1,276	1,534	1,791	2,048	2,306	2,563	
13	1,197	1,500	1,802	2,104	2,406	2,708	3,010	
14	1,391	1,741	2,091	2,442	2,792	3,142	3,493	
15	1,598	2,000	2,402	2,804	3,207	3,609	4,011	4,413
16		2,277	2,735	3,192	3,650	4,107	4,565	5,023
17		2,572	3,089	3,605	4,122	4,638	5,155	5,671
18			3,464	4,043	4,622	5,201	5,780	6,359
19			3,861	4,506	5,151	5,796	6,442	7,087
20			4,279	4,994	5,709	6,424	7,139	7,854
21				4,719	5,507	6,295	7,083	7,872
22					5,180	6,045	6,910	7,775
23						6,608	7,553	8,499
24							9,255	10,285
								11,314

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -10.79364 + 0.17874 (D^2 Th)$

where: Y = total tree weight

D = d.b.h. in inches

Th = total height in feet.

Table 6.--Predicted green weight of wood and bark to a 4-inch d.o.b. top
for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
6	169	222	276	329	382			
7	246	319	391	463	536			
8	335	429	524	619	713			
9	435	555	675	795	914	1,034		
10	548	696	843	991	1,139	1,287		
11	672	851	1,030	1,209	1,388	1,566		
12	808	1,021	1,234	1,447	1,660	1,873	2,085	
13	956	1,206	1,456	1,705	1,955	2,205	2,455	
14	1,116	1,405	1,695	1,985	2,275	2,565	2,854	
15	1,287	1,620	1,952	2,285	2,618	2,950	3,283	3,616
16		1,849	2,227	2,606	2,984	3,363	3,742	4,120
17		2,093	2,520	2,947	3,375	3,802	4,229	4,657
18			2,831	3,310	3,789	4,268	4,747	5,226
19			3,159	3,693	4,226	4,760	5,294	5,828
20			3,505	4,096	4,688	5,279	5,871	6,462
21			3,869	4,521	5,173	5,825	6,477	7,129
22			4,250	4,966	5,681	6,397	7,113	7,828
23				5,432	6,214	6,996	7,778	8,560
24				5,918	6,770	7,621	8,473	9,325

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -43.71191 + 0.14786 (D^2 Th)$

where: Y = stem weight to 4-inches d.o.b. top;

D = d.b.h. in inches;

Th = total height.

Table 7.--Predicted green weight of wood and bark to a 7-inch d.o.b. top
for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
8	133	171	209	246	284			
9	274	349	425	500	575	651		
10	416	528	641	753	865	978		
11	563	713	863	1,013	1,162	1,312		
12	716	905	1,094	1,283	1,471	1,660	1,849	
13	878	1,107	1,337	1,566	1,796	2,025	2,255	
14	1,048	1,321	1,593	1,866	2,138	2,410	2,683	
15	1,229	1,546	1,864	2,182	2,499	2,817	3,134	3,452
16		1,785	2,150	2,515	2,881	3,246	3,612	3,977
17		2,036	2,452	2,868	3,284	3,699	4,115	4,531
18			2,770	3,239	3,708	4,177	4,645	5,114
19			3,105	3,630	4,154	4,679	5,203	5,728
20			3,456	4,040	4,623	5,206	5,789	6,373
21			3,825	4,469	5,114	5,759	6,403	7,048
22			4,210	4,919	5,628	6,337	7,046	7,755
23				5,389	6,165	6,941	7,717	8,494
24				5,879	6,725	7,571	8,418	9,264

^{1/} Blocked-in area indicates range of data.

$$Y = -43.71191 + 0.14786 (D^2 Th)$$

$$R = 1-1.100642 (Dt^4 \cdot 0.88169 / D^4 \cdot 1.15909)$$

$$\text{Weight to Dt} = R(Y)$$

where: Y = stem weight to 4-inches d.o.b. top; D = d.b.h. in inches;
Th = total height; Dt = 7 inches d.o.b.

Table 8.--Predicted green weight of wood and bark to a 9-inch d.o.b. top
for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Pounds^{2/}</u>								
10	180	229	277	326	375	423		
11	367	465	563	661	758	856		
12	552	697	843	988	1,134	1,279	1,425	
13	738	931	1,124	1,317	1,510	1,703	1,895	
14	928	1,169	1,410	1,651	1,893	2,134	2,375	
15	1,124	1,415	1,705	1,996	2,287	2,577	2,868	3,158
16		1,670	2,011	2,353	2,695	3,037	3,379	3,720
17		1,935	2,330	2,725	3,120	3,515	3,910	4,305
18			2,662	3,112	3,563	4,013	4,463	4,914
19			3,008	3,516	4,024	4,533	5,041	5,549
20			3,369	3,938	4,506	5,075	5,643	6,212
21			3,746	4,378	5,009	5,640	6,272	6,903
22			4,139	4,836	5,533	6,230	6,927	7,624
23				5,313	6,078	6,844	7,609	8,374
24				5,810	6,646	7,482	8,318	9,154

^{1/} Blocked-in area indicates range of data.

$$Y = -43.71191 + 0.14786 (D^2 Th)$$

$$R = 1 - 1.100642 (Dt^4 \cdot 0.088169 / D^4 \cdot 1.115909)$$

Weight to Dt = R(Y)

where: Y = stem weight to 4-inch d.o.b. top; D = d.b.h. in inches;
Th = total height; Dt = 9-inches d.o.b.

Table 9.--Predicted green weight of wood, bark, and foliage in the crown^{1/} of loblolly pine^{2/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{3/}</u>							
6	77	89	100	111	122			
7	93	109	124	139	154			
8	112	132	152	171	191			
9	133	158	183	208	233	258		
10	156	187	218	249	280	311		
11	182	220	257	295	332	369		
12	211	255	300	344	389	433	478	
13	242	294	346	398	451	503	555	
14	275	336	396	457	517	578	638	
15	311	380	450	519	589	658	728	797
16		428	507	586	666	745	824	903
17		479	569	658	747	836	926	1,015
18			633	734	834	934	1,034	1,134
19			702	814	925	1,037	1,148	1,260
20			774	898	1,021	1,145	1,269	1,392
21				850	986	1,123	1,259	1,395
22				930	1,079	1,229	1,378	1,678
23					1,177	1,340	1,504	1,830
24					1,278	1,456	1,634	1,990

^{1/} Crown is the portion of the stem above 4-inches d.o.b. and branches.

^{2/} Blocked-in area indicates range of data.

^{3/} $Y = 32.91827 + 0.03089 (D^2 Th)$

where: Y = weight of crown; D = d.b.h. in inches;
 Th = total height.

Table 10.--Predicted volume of stem to a 4-inch d.o.b. top (wood only)
for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Cubic feet</u> ^{2/}							
6	2.5	3.3	4.1	4.8	5.6			
7	3.6	4.7	5.7	6.7	7.8			
8	4.9	6.2	7.6	8.9	10.3			
9	6.3	8.0	9.8	11.5	13.2	14.9		
10	7.9	10.0	12.2	14.3	16.4	18.5		
11	9.7	12.3	14.8	17.4	19.9	22.5		
12	11.6	14.7	17.7	20.8	23.8	26.8	29.9	
13	13.8	17.3	20.9	24.5	28.0	31.6	35.2	
14	16.0	20.2	24.3	28.4	32.6	36.7	40.9	
15	18.5	23.2	28.0	32.7	37.5	42.2	47.0	51.7
16		26.5	31.9	37.3	42.7	48.1	53.5	58.9
17		30.0	36.1	42.2	48.3	54.4	60.5	66.6
18			40.5	47.4	54.2	61.0	67.9	74.7
19			45.2	52.8	60.4	68.0	75.7	83.3
20			50.1	58.6	67.0	75.5	83.9	92.3
21			55.3	64.6	73.9	83.2	92.5	101.9
22			60.8	71.0	81.2	91.4	101.6	111.8
23				77.6	88.8	100.0	111.1	122.3
24				84.6	96.7	108.9	121.0	133.2

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -0.50414 + 0.00211 (D^2 Th)$

where: Y = volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet.

Table 11.--Predicted volume of stem to a 7-inch d.o.b. top (wood only)
for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Cubic feet^{2/}</u>								
8	2.0	2.6	3.1	3.7	4.3			
9	4.1	5.2	6.3	7.4	8.5	9.6		
10	6.1	7.8	9.4	11.0	12.7	14.3		
11	8.2	10.4	12.6	14.7	16.9	19.1		
12	10.4	13.2	15.9	18.6	21.3	24.0	26.8	
13	12.7	16.0	19.3	22.6	25.9	29.2	32.5	
14	15.2	19.1	23.0	26.9	30.8	34.7	38.6	
15	17.7	22.3	26.9	31.4	36.0	40.5	45.1	49.6
16		25.7	30.9	36.2	41.4	46.6	51.9	57.1
17		29.3	35.2	41.2	47.1	53.1	59.0	65.0
18			39.8	46.5	53.2	59.9	66.6	73.3
19			44.5	52.0	59.5	67.0	74.5	82.1
20			49.5	57.9	66.2	74.6	82.9	91.2
21			54.8	64.0	73.2	82.4	91.7	100.9
22			60.3	70.4	80.6	90.7	100.8	110.9
23				77.1	88.2	99.3	110.4	121.5
24				84.1	96.2	108.3	120.4	132.5

^{1/} Blocked-in area indicates range of data.

$$Y = -0.50414 + 0.00211 (D^2 Th)$$

$$R = 1 - 1.058972 (Dt^{4.243966} / D^4 \cdot 25571^4)$$

Volume to Dt = R(Y)

where: Y = stem volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b.

Table 12.--Predicted volume of stem to a 9-inch d.o.b. top (wood only)
for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Cubic feet^{2/}</u>								
10	2.7	3.4	4.1	4.9	5.6	6.3		
11	5.4	6.9	8.3	9.7	11.2	12.6		
12	8.1	10.2	12.3	14.5	16.6	18.7	20.8	
13	10.8	13.6	16.4	19.2	22.0	24.8	27.6	
14	13.5	17.0	20.5	24.0	27.5	30.9	34.4	
15	16.3	20.5	24.7	28.9	33.1	37.3	41.5	45.6
16		24.1	29.1	34.0	38.9	43.8	48.7	53.7
17		27.9	33.6	39.3	45.0	50.6	56.3	62.0
18			38.3	44.8	51.3	57.7	64.2	70.7
19			43.3	50.5	57.8	65.1	72.4	79.7
20			48.4	56.6	64.7	72.9	81.0	89.2
21			53.8	62.8	71.9	80.9	90.0	99.0
22			59.4	69.4	79.3	89.3	99.3	109.3
23				76.2	87.1	98.1	109.0	119.9
24				83.2	95.2	107.1	119.1	131.1

^{1/} Blocked-in area indicates range of data.

$$Y = -0.50414 + 0.00211 (D^2 Th)$$

$$R = 1 - 1.058972 (Dt^4 \cdot 243966 / D^4 \cdot 25571^4)$$

$$\text{Volume to } Dt = R(Y)$$

where: Y = stem volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 9 inches d.o.b.

Table 13.--Predicted board feet (Scribner) to 7-inch d.o.b. top for
loblolly pine^{1/}

D.b.h. class (inches)	40	50	60	70	80	90	100	110	Total height (feet)	
									-Board feet ^{2/} -	
10	3	17	31	45	59	73				
11	15	32	49	65	82	99				
12	28	48	68	88	108	128	148			
13	42	65	89	112	136	159	182			
14	57	84	111	138	166	193	220			
15	73	104	135	167	198	229	260	291		
16		126	161	197	232	268	303	339		
17		148	189	229	269	309	349	389		
18			218	263	308	353	398	443		
19			249	299	349	399	449	499		
20			281	337	392	448	503	559		
21			315	376	438	499	560	621		
22			351	418	485	553	620	687		
23				462	535	609	682	756		
24				508	588	667	747	827		

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -52.072418 + 0.013880 (D^2 Th)$

where: Y = board feet to 7-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet.

Table 14.--Predicted green weight of sawtimber per MBF (Scribner) to a 7-inch d.o.b. top for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds/MBF^{2/3}</u>							
10		30,499	20,534	16,704	14,678	13,423		
11	37,261	22,343	17,715	15,460	14,126	13,244		
12	25,696	18,910	16,121	14,602	13,646	12,989	12,510	
13	21,023	16,980	15,076	13,969	13,245	12,734	12,355	
14	18,475	15,733	14,333	13,483	12,913	12,503	12,195	
15	16,867	14,858	13,776	13,100	12,637	12,301	12,045	11,844
16		14,210	13,344	12,791	12,407	12,125	11,910	11,739
17		13,713	13,001	12,538	12,214	11,974	11,789	11,642
18			12,722	12,328	12,050	11,843	11,683	11,555
19			12,491	12,152	11,910	11,730	11,589	11,477
20		12,298	12,002	11,790	11,631	11,507	11,407	
21		12,135	11,874	11,686	11,545	11,434	11,345	
22		11,995	11,764	11,596	11,469	11,370	11,290	
23			11,667	11,517	11,403	11,313	11,241	
24			11,583	11,447	11,344	11,262	11,197	

^{1/} Blocked-in area indicates range of data.

$$Y = -43.71191 + 0.14786 (D^2 Th)$$

$$R = 1.0 - 1.100642 (D t^4 \cdot 0.088169 / D^4 \cdot 1.115909)$$

Weight to Dt = $R(Y)$

where: Y = stem weight to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b. top.

$$BF = -52.07242 + 0.01388 (D^2 Th)$$

Table 15.--Predicted green weight of pulpwood from 7-inch d.o.b. top to 4-inch d.o.b. top per MBF (Scribner) for loblolly pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Pounds/MBF^{2/3}</u>								
10		9,644	6,493	5,282	4,641	4,244		
11	7,218	4,328	3,432	2,995	2,737	2,566		
12	3,288	2,419	2,063	1,868	1,746	1,662	1,601	
13	1,868	1,509	1,339	1,241	1,177	1,131	1,098	
14	1,182	1,007	917	863	826	800	780	
15	800	705	653	621	599	583	571	562
16		511	480	460	446	436	428	422
17		381	361	349	340	333	328	324
18			278	269	263	259	255	252
19			217	212	207	204	202	200
20			173	169	166	163	162	160
21			139	136	134	132	131	130
22			113	111	110	108	107	107
23				92	90	90	89	88
24				76	75	75	74	74

^{1/} Blocked-in area indicates range of data.

$$Y = -43.71191 + 0.14786 (D^2 Th)$$

$$R = 1.0 - 1.100642 (Dt^4 \cdot 0.088169 / D^4 \cdot 1.115909)$$

Weight to Dt = $R(Y)$

Pulpwood weight = $Y(1-R)$

where: Y = stem weight to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b. top.

$$BF = -52.07242 + 0.01388 (D^2 Th)$$

Table 16.--Predicted rough cords to a 4-inch d.o.b. top for loblolly pine ^{1/2/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Cords</u> ^{3/}							
6	0.039	0.048	0.058	0.068	0.077			
7	.057	.071	.085	.099	.113			
8	.074	.093	.111	.129	.148			
9	.093	.116	.140	.163	.186	0.209		
10	.113	.141	.169	.197	.225	.253		
11	.135	.168	.201	.235	.268	.302		
12	.157	.196	.235	.275	.314	.353	0.392	
13	.182	.227	.272	.318	.363	.408	.453	
14	.208	.260	.312	.363	.415	.467	.519	
15	.236	.295	.353	.412	.471	.530	.588	0.647
16		.331	.397	.463	.529	.595	.661	.727
17		.370	.444	.518	.592	.666	.740	.814
18			.493	.575	.657	.739	.821	.903
19			.544	.635	.726	.816	.907	.997
20			.598	.698	.798	.897	.997	1.096
21			.655	.764	.873	.982	1.091	1.201
22			.714	.833	.952	1.071	1.190	1.309
23				.902	1.031	1.160	1.289	1.417
24				.973	1.111	1.250	1.389	1.528

^{1/} Blocked-in area indicates range of data.

$$\frac{1}{2}/ Y = 5.02395 + 0.14692 (D^2 Th)$$

$$R = 1 - 1.429981 (Dt^{3.759633} / D^{3.909743})$$

Weight to Dt = R(Y)

where: Y = total stem weight; D = d.b.h. in inches; Th = total height;
Dt = 4 inches d.o.b.; R = merchantable weight to Dt/total stem
weight.

^{3/} Cords = (wt. to Dt/wt. factor)/cubic feet per cord factor

where: wt. factor = 69.44 pounds per cubic foot; cubic feet per cord
factor varies with d.b.h. class. Source: USDA Forest Serv.
Res. Bul. SE-27, Asheville, NC.

SECTION II

SHORTLEAF PINE YIELD TABLES

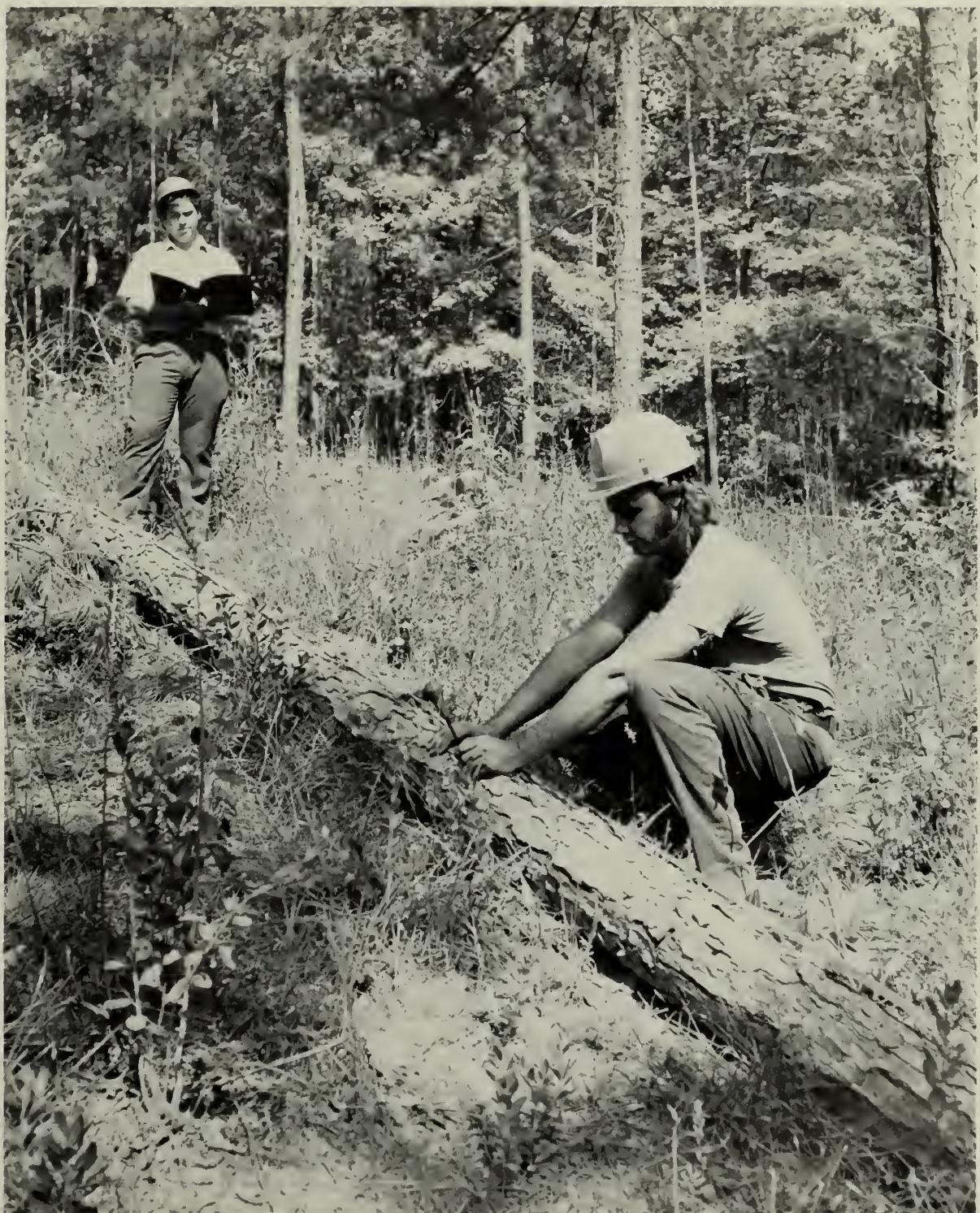


Table 17.--Predicted green weight of total tree (wood, bark, and foliage)
for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
6	220	289	358	427	495			
7	320	413	507	601	694			
8	434	557	679	801	923			
9	564	719	874	1,028	1,183	1,338		
10	709	900	1,092	1,283	1,474	1,665		
11	870	1,101	1,332	1,563	1,795	2,026		
12	1,046	1,321	1,596	1,871	2,146	2,421	2,696	
13	1,237	1,560	1,882	2,205	2,528	2,851	3,174	
14	1,443	1,818	2,192	2,566	2,941	3,315	3,690	
15	1,665	2,095	2,524	2,954	3,384	3,814	4,244	4,674
16		2,391	2,880	3,369	3,858	4,347	4,836	5,325
17		2,706	3,258	3,810	4,362	4,914	5,467	6,019
18			3,659	4,278	4,897	5,516	6,135	6,754
19			4,083	4,773	5,463	6,152	6,842	7,532
20			4,530	5,295	6,059	6,823	7,587	8,351
21			5,000	5,843	6,685	7,528	8,371	9,213
22			5,493	6,418	7,343	8,267	9,192	10,117
23				7,020	8,030	9,041	10,052	11,062
24				7,648	8,749	9,849	10,950	12,050

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -54.75468 + 0.19105 (D^2 Th)$

where: Y = total tree weight

D = d.b.h. in inches.

Th = total height in feet.

Table 18.--Predicted green weight of wood and bark to a 4-inch d.o.b. top
 for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
6	169	226	284	342	399			
7	252	330	409	487	566			
8	348	450	553	655	758			
9	457	587	716	846	976	1,105		
10	579	739	899	1,059	1,219	1,379		
11	713	907	1,101	1,294	1,488	1,682		
12	860	1,091	1,322	1,552	1,783	2,014	2,244	
13	1,021	1,291	1,562	1,833	2,103	2,374	2,644	
14	1,194	1,507	1,821	2,135	2,449	2,763	3,077	
15	1,379	1,740	2,100	2,460	2,821	3,181	3,541	3,902
16		1,988	2,398	2,808	3,218	3,628	4,038	4,448
17		2,252	2,715	3,178	3,641	4,103	4,566	5,029
18			3,051	3,570	4,089	4,608	5,127	5,646
19			3,407	3,985	4,563	5,141	5,719	6,298
20			3,782	4,422	5,063	5,703	6,344	6,985
21			4,176	4,882	5,588	6,294	7,001	7,707
22			4,589	5,364	6,139	6,914	7,689	8,464
23				5,868	6,716	7,563	8,410	9,257
24				6,395	7,318	8,240	9,163	10,085

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -62.03804 + 0.16015 (D^2 Th)$

where: Y = stem weight to 4-inches d.o.b. top;

D = d.b.h. in inches;

Th = total height.

Table 19.--Predicted green weight of wood and bark to a 7-inch d.o.b. top
for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
8	159	206	252	299	346			
9	307	394	481	568	656	743		
10	458	584	711	838	964	1,091		
11	614	781	948	1,115	1,282	1,448		
12	778	987	1,195	1,404	1,612	1,821	2,029	
13	951	1,204	1,456	1,708	1,960	2,213	2,465	
14	1,135	1,433	1,731	2,030	2,328	2,626	2,925	
15	1,329	1,676	2,023	2,370	2,717	3,064	3,411	3,758
16		1,932	2,331	2,730	3,128	3,527	3,925	4,324
17		2,204	2,657	3,109	3,562	4,015	4,468	4,921
18			3,000	3,510	4,020	4,530	5,041	5,551
19			3,361	3,932	4,502	5,073	5,643	6,213
20			3,741	4,375	5,008	5,642	6,276	6,910
21			4,139	4,839	5,539	6,240	6,940	7,640
22			4,556	5,326	6,095	6,865	7,634	8,404
23				5,834	6,676	7,518	8,360	9,203
24				6,364	7,282	8,200	9,118	10,036

^{1/} Blocked-in area indicates range of data.

$$\frac{2}{2} Y = -62.03804 + 0.16015 (D^2 Th)$$

$$R = 1 - 0.76457 (D_t^4 \cdot 40296 / D^4 \cdot 28441)$$

$$\text{Weight to } D_t = R(Y)$$

where: Y = stem weight to 4-inches d.o.b. top; D = d.b.h. in inches;
Th = total height; D_t = 7-inches d.o.b.

Table 20.-- Predicted green weight of wood and bark to a 9-inch d.o.b. top
for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Pounds^{2/}</u>								
10	213	272	331	390	449	508		
11	414	526	638	751	863	976		
12	612	775	939	1,103	1,267	1,431	1,595	
13	811	1,026	1,241	1,456	1,671	1,887	2,102	
14	1,015	1,282	1,549	1,816	2,083	2,350	2,617	
15	1,226	1,546	1,866	2,187	2,507	2,827	3,148	3,468
16		1,820	2,196	2,571	2,946	3,322	3,697	4,073
17		2,106	2,538	2,971	3,404	3,837	4,269	4,702
18			2,896	3,388	3,881	4,373	4,866	5,358
19			3,269	3,824	4,379	4,934	5,488	6,043
20			3,659	4,279	4,899	5,518	6,138	6,758
21			4,066	4,753	5,441	6,129	6,816	7,504
22			4,490	5,248	6,007	6,765	7,524	8,282
23				5,764	6,596	7,428	8,260	9,092
24				6,300	7,209	8,118	9,027	9,935

^{1/} Blocked-in area indicates range of data.

$$Y = -62.03804 + 0.16015 (D^2 Th)$$

$$R = 1 - 0.76457 (Dt^{4.40296} / D^{4.28441})$$

$$\text{Weight to Dt} = R(Y)$$

where: Y = stem weight to 4-inch d.o.b. top; D = d.b.h. in inches;

Th = total height; Dt = 9-inches d.o.b.

Table 21.--Predicted green weight of wood, bark, and foliage in the crown^{1/} of shortleaf pine^{2/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{3/}</u>							
6	52	63	74	85	96			
7	68	83	98	113	128			
8	86	106	126	146	166			
9	107	132	158	183	208	233		
10	131	162	193	224	255	285		
11	157	194	232	269	306	344		
12	185	230	274	319	363	408	452	
13	216	268	321	373	425	477	530	
14	250	310	371	431	492	553	613	
15	285	355	425	494	564	633	703	772
16		403	482	561	640	719	799	878
17		454	543	633	722	811	901	990
18			608	708	808	909	1,009	1,109
19			677	788	900	1,012	1,123	1,235
20			749	873	996	1,120	1,244	1,367
21			825	961	1,098	1,234	1,370	1,507
22			905	1,055	1,204	1,354	1,503	1,653
23				1,152	1,315	1,479	1,642	1,806
24				1,254	1,432	1,610	1,788	1,966

^{1/} Crown is the portion of the stem above 4-inches d.o.b. and branches.

^{2/} Blocked-in area indicates range of data.

^{3/} $Y = 7.28337 + 0.03091 (D^2 Th)$

where: Y = weight of crown; D = d.b.h. in inches;
 Th = total height.

Table 22.--Predicted volume of stem to a 4-inch d.o.b. top (wood only)
for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>2/</u> - - - - - Cubic feet - - - - -								
6	2.3	3.2	4.0	4.8	5.6			
7	3.5	4.7	5.8	6.9	8.0			
8	4.9	6.4	7.8	9.3	10.8			
9	6.5	8.3	10.2	12.1	13.9	15.8		
10	8.2	10.5	12.8	15.1	17.4	19.7		
11	10.1	12.9	15.7	18.5	21.3	24.1		
12	12.3	15.6	18.9	22.2	25.5	28.8	32.1	
13	14.6	18.5	22.3	26.2	30.1	34.0	37.9	
14	17.0	21.6	26.1	30.6	35.1	39.6	44.1	
15	19.7	24.9	30.1	35.2	40.4	45.6	50.8	55.9
16		28.5	34.3	40.2	46.1	52.0	57.9	63.8
17		32.3	38.9	45.5	52.2	58.8	65.5	72.1
18			43.7	51.2	58.6	66.1	73.5	81.0
19			48.8	57.1	65.4	73.7	82.0	90.4
20			54.2	63.4	72.6	81.8	91.0	100.2
21			59.9	70.0	80.2	90.3	100.4	110.6
22			65.8	76.9	88.1	99.2	110.3	121.5
23				84.2	96.4	108.5	120.7	132.9
24				91.8	105.0	118.2	131.5	144.7

^{1/} Blocked-in area indicates range of data.

$$\frac{2}{2} Y = -0.98284 + 0.00230 (D^2 Th)$$

where: Y = volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet.

Table 23 .--Predicted volume of stem to a 7-inch d.o.b. top (wood only)
for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Cubic feet</u> ^{2/}							
8	2.3	3.0	3.6	4.3	5.0			
9	4.4	5.7	7.0	8.2	9.5	10.8		
10	6.6	8.4	10.3	12.1	14.0	15.8		
11	8.8	11.3	13.7	16.1	18.5	21.0		
12	11.2	14.2	17.2	20.3	23.3	26.3	29.3	
13	13.7	17.3	21.0	24.6	28.3	31.9	35.6	
14	16.3	20.6	24.9	29.2	33.5	37.9	42.2	
15	19.1	24.1	29.1	34.1	39.1	44.1	49.1	54.1
16		27.8	33.5	39.3	45.0	50.8	56.5	62.2
17		31.7	38.2	44.7	51.2	57.8	64.3	70.8
18			43.1	50.5	57.8	65.1	72.5	79.8
19			48.3	56.5	64.7	72.9	81.1	89.3
20			53.7	62.9	72.0	81.1	90.2	99.3
21			59.4	69.5	79.6	89.7	99.7	109.8
22			65.4	76.5	87.6	98.6	109.7	120.8
23				83.8	95.9	108.0	120.1	132.2
24				91.4	104.6	117.8	131.0	144.2

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -0.98284 + 0.00230 (D^2 Th)$

$R = 1 - 0.757128 (Dt^{4.597023} / D^{4.468793})$

Volume to $Dt = R(Y)$

where: Y = stem volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b.

Table 24.--Predicted volume of stem to a 9-inch d.o.b. top (wood only)
for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Cubic feet</u> ^{2/}							
10	3.1	3.9	4.8	5.6	6.5	7.4		
11	6.0	7.6	9.3	10.9	12.6	14.2		
12	8.9	11.3	13.6	16.0	18.4	20.8	23.2	
13	11.7	14.9	18.0	21.1	24.3	27.4	30.5	
14	14.7	18.6	22.4	26.3	30.2	34.1	38.0	
15	17.7	22.3	27.0	31.6	36.3	40.9	45.6	50.2
16		26.3	31.7	37.1	42.6	48.0	53.5	58.9
17		30.4	36.6	42.9	49.1	55.4	61.7	67.9
18			41.7	48.9	56.0	63.1	70.2	77.3
19			47.1	55.1	63.1	71.1	79.1	87.1
20			52.7	61.6	70.6	79.5	88.4	97.4
21			58.5	68.4	78.3	88.2	98.2	108.1
22			64.6	75.5	86.4	97.4	108.3	119.2
23				82.9	94.9	106.9	118.9	130.8
24				90.6	103.7	116.8	129.8	142.9

^{1/} Blocked-in area indicates range of data
^{2/} Y = $-0.98284 + 0.00230 (D^2 Th)$

$$R = 1 - 0.75713 (Dt^{4.59702} / D^{4.46879})$$

Volume to Dt = R(Y)

where: Y = stem volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 9 inches d.o.b.

Table 25.--Predicted board feet (Scribner) to 7-inch d.o.b. top for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Board feet^{2/}</u>								
10	9	23	37	52	66	80		
11	21	38	55	72	89	106		
12	34	54	75	95	115	136	156	
13	48	72	96	120	144	167	191	
14	63	91	119	146	174	202	229	
15	80	111	143	175	207	238	270	302
16		133	169	206	242	278	314	350
17		157	197	238	279	320	361	401
18			227	273	318	364	410	456
19			258	309	360	411	462	513
20			291	348	404	461	517	574
21			326	388	451	513	575	637
22			363	431	499	567	636	704
23				475	550	625	699	774
24				522	603	684	765	847

^{1/} Blocked-in area indicates range of data.

$$\underline{2/} \quad Y = -47.242966 + 0.014110 (D^2 Th)$$

where: Y = board feet to 7-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet.

Table 26.--Predicted green weight of sawtimber per MBF (Scribner) to a 7-inch d.o.b. top for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)						
	50	60	70	80	90	100	110
	<u>Pounds/MBF^{2/}_{3/}</u>						
10	25,074	19,004	16,259	14,694	13,683		
11	20,485	17,172	15,424	14,344	13,611		
12	18,155	16,007	14,779	13,983	13,426	13,014	
13	16,719	15,192	14,273	13,659	13,220	12,891	
14	15,741	14,587	13,869	13,380	13,024	12,755	
15	15,029	14,121	13,543	13,142	12,848	12,623	12,445
16	14,490	13,753	13,275	12,940	12,693	12,502	12,350
17	14,068	13,456	13,054	12,769	12,557	12,393	12,262
18		13,212	12,868	12,623	12,439	12,296	12,182
19		13,009	12,711	12,497	12,336	12,211	12,110
20		12,838	12,577	12,389	12,247	12,135	12,046
21		12,693	12,462	12,295	12,168	12,069	11,989
22		12,568	12,362	12,213	12,099	12,010	11,938
23			12,275	12,140	12,038	11,957	11,892
24			12,199	12,077	11,984	11,911	11,852

^{1/} Blocked-in area indicates range of data.

$$Y = -62.03804 + 0.16015 (D^2 Th)$$

$$R = 1.0 - 0.764572 (Dt^{4.40296} / D^4 \cdot 28441)$$

Weight to Dt = R(Y)

where: Y = stem weight to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b. top.

$$\underline{3/} \quad BF = -47.24297 + 0.01411 (D^2 Th)$$

Table 27.--Predicted green weight of pulpwood from 7-inch d.o.b. top to 4-inch d.o.b. top per MBF (Scribner) for shortleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds/MBF^{2/3}</u>							
10	13,141	6,621	5,018	4,293	3,880	3,613		
11	4,704	3,303	2,769	2,487	2,313	2,195		
12	2,418	1,920	1,693	1,563	1,479	1,420	1,377	
13	1,439	1,218	1,106	1,039	995	963	939	
14	931	818	758	721	696	677	663	
15	636	574	539	517	502	490	482	475
16		416	395	381	371	364	359	354
17		309	296	287	281	276	272	270
18			226	220	216	213	211	209
19			176	172	169	167	165	164
20			139	136	134	133	132	131
21			111	109	108	107	106	105
22			90	89	88	87	86	86
23				73	72	71	71	70
24				60	60	59	59	58

^{1/} Blocked-in area indicates range of data.

$$\underline{2/} \quad Y = -62.03804 + 0.16015 (D^2 Th)$$

$$R = 1.0 - 0.764572 (Dt^{4.40296} / D^{4.28441})$$

Weight to Dt = $R(Y)$

Pulpwood weight = $Y(1-R)$

where: Y = stem weight to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b. top.

$$\underline{3/} \quad BF = -47.24297 + 0.01411 (D^2 Th).$$

Table 28.--Predicted rough cords to a 4-inch d.o.b. top for shortleaf pine^{1/2/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Cords^{3/}</u>							
6	0.039	0.050	0.061	0.071	0.082			
7	.058	.073	.089	.104	.120			
8	.077	.097	.117	.137	.157			
9	.097	.122	.147	.172	.198	0.223		
10	.118	.149	.179	.209	.240	.270		
11	.141	.178	.214	.250	.286	.322		
12	.166	.208	.250	.293	.335	.377	0.420	
13	.192	.241	.290	.339	.388	.437	.486	
14	.220	.276	.332	.388	.444	.500	.556	
15	.251	.314	.377	.441	.504	.568	.631	0.695
16		.353	.425	.496	.567	.638	.710	.781
17		.396	.475	.555	.635	.715	.795	.874
18			.528	.616	.705	.794	.882	.971
19			.583	.681	.779	.876	.974	1.072
20			.642	.749	.856	.964	1.071	1.179
21				.703	.820	.938	1.056	1.173
22				.766	.895	1.023	1.151	1.279
23					.969	1.108	1.247	1.386
24					1.045	1.195	1.344	1.494
								1.644

^{1/}
^{2/} Blocked-in area indicates range of data.

$$Y = -18.12886 + 0.15895 (D^2 TH)$$

$$R = 1 - 1.27526 (Dt^{3.93817} / D^4 \cdot 0.06297)$$

Weight to Dt = R(Y)

where: Y = total stem weight; D = d.b.h. in inches; TH = total height;
Dt = 4 inches d.o.b.; R = merchantable weight to Dt/total stem
weight.

^{3/} Cords = (wt. to Dt/wt. factor)/cubic feet per cord factor

where: wt. factor = 69.68 pounds per cubic foot; cubic feet per cord
factor varies with d.b.h. class. Source: USDA Forest Serv.
Res. Bul. SE-27, Asheville, NC.

SECTION III

LONGLEAF PINE YIELD TABLES



Table 29.--Predicted green weight of total tree (wood, bark, and foliage)
 for longleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
6	248	321	394	467	540			
7	353	453	552	652	751			
8	475	605	735	865	995			
9	613	778	942	1,106	1,271	1,435		
10	767	970	1,173	1,376	1,579	1,782		
11	938	1,184	1,429	1,675	1,920	2,166		
12	1,125	1,417	1,709	2,002	2,294	2,586	2,878	
13	1,328	1,671	2,014	2,357	2,700	3,043	3,386	
14	1,547	1,945	2,343	2,740	3,138	3,536	3,934	
15	1,782	2,239	2,696	3,152	3,609	4,066	4,522	4,979
16		2,554	3,073	3,593	4,112	4,632	5,152	5,671
17		2,888	3,475	4,062	4,648	5,235	5,821	6,408
18			3,901	4,559	5,217	5,874	6,532	7,189
19			4,352	5,085	5,817	6,550	7,283	8,016
20			4,827	5,639	6,451	7,262	8,074	8,886
21			5,326	6,221	7,116	8,011	8,907	9,802
22			5,850	6,832	7,815	8,797	9,779	10,762
23				7,472	8,545	9,619	10,693	11,766
24				8,139	9,308	10,478	11,647	12,816

^{1/} Blocked-in area indicates range of data.
^{2/} $Y = -44.418879 + 0.20297 (D^2 Th)$

where: Y = total tree weight

D = d.b.h. in inches

Th = total height in feet.

Table 30.--Predicted green weight of wood and bark to a 4-inch d.o.b. top
for longleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
6	188	244	300	356	413			
7	269	346	422	499	575			
8	363	463	563	662	762			
9	469	595	722	848	975	1,101		
10	587	744	900	1,056	1,212	1,368		
11	719	907	1,096	1,285	1,474	1,663		
12	862	1,087	1,312	1,536	1,761	1,986	2,211	
13	1,018	1,282	1,546	1,810	2,073	2,337	2,601	
14	1,187	1,493	1,799	2,105	2,411	2,716	3,022	
15	1,368	1,719	2,070	2,421	2,773	3,124	3,475	3,826
16		1,961	2,361	2,760	3,160	3,559	3,959	4,358
17		2,219	2,670	3,121	3,572	4,023	4,474	4,925
18			2,997	3,503	4,009	4,514	5,020	5,526
19			3,344	3,907	4,471	5,034	5,598	6,161
20			3,709	4,333	4,958	5,582	6,206	6,831
21			4,093	4,781	5,470	6,158	6,846	7,535
22			4,496	5,251	6,007	6,762	7,517	8,273
23				5,743	6,568	7,394	8,220	9,045
24				6,256	7,155	8,054	8,953	9,852

^{1/} Blocked-in area indicates range of data.

$$\frac{1}{2}/ Y = -36.83043 + 0.15608 (D^2 Th)$$

where: Y = stem weight to 4-inches d.o.b. top;

D = d.b.h. in inches;

Th = total height.

Table 31.--Predicted green weight of wood and bark to a 7-inch d.o.b. top
for longleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds</u> ^{2/}							
8	163	208	253	298	343			
9	310	394	478	561	645	728		
10	459	581	702	824	946	1,068		
11	612	773	934	1,095	1,256	1,417		
12	773	975	1,176	1,378	1,579	1,781	1,982	
13	943	1,187	1,431	1,675	1,919	2,163	2,408	
14	1,122	1,411	1,700	1,989	2,279	2,568	2,857	
15	1,312	1,648	1,985	2,322	2,658	2,995	3,332	3,669
16		1,899	2,286	2,673	3,060	3,447	3,834	4,221
17		2,164	2,604	3,044	3,484	3,924	4,364	4,804
18			2,939	3,435	3,931	4,427	4,923	5,419
19			3,292	3,847	4,401	4,956	5,511	6,065
20			3,662	4,279	4,895	5,512	6,128	6,745
21			4,051	4,732	5,413	6,095	6,776	7,457
22			4,458	5,207	5,956	6,705	7,454	8,203
23				5,702	6,522	7,342	8,162	8,981
24				6,219	7,113	8,007	8,900	9,794

^{1/} Blocked-in area indicates range of data.

$$Y = -36.83043 + 0.15608 (D^2 Th)$$

$$R = 1 - 0.647787 (Dt^4 \cdot 321359 / D^4 \cdot 122653)$$

Weight to Dt = R(Y)

where: Y = stem weight to 4-inches d.o.b. top; D = d.b.h. in inches;

Th = total height; Dt = 7 inches d.o.b.

Table 32.--Predicted green weight of wood and bark to a 9-inch d.o.b. top
for longleaf pine^{1/}

D.b.h. class (inches)	40	50	60	70	80	Total height (feet)		
						Pounds ^{2/}		
10	206	261	316	370	425		480	
11	404	510	616	722	828		934	
12	598	754	910	1,066	1,222	1,378		1,534
13	794	1,000	1,206	1,411	1,617	1,823		2,028
14	994	1,251	1,507	1,763	2,020	2,276		2,532
15	1,201	1,509	1,818	2,126	2,434	2,743		3,051
16		1,778	2,140	2,502	2,864	3,226		3,589
17		2,057	2,475	2,893	3,312	3,730		4,148
18			2,825	3,301	3,778	4,255		4,731
19			3,190	3,727	4,265	4,802		5,340
20			3,571	4,172	4,773	5,374		5,975
21			3,968	4,636	5,303	5,970		6,638
22			4,383	5,119	5,855	6,592		7,305
23				5,623	6,431	7,239		8,048
24				6,146	7,030	7,913		8,856
								9,679

^{1/} Blocked-in area indicates range of data.

^{2/} Y = -36.83043 + 0.15608 (D²Th)

R = 1-0.647787 (Dt⁴.321359 / D⁴.122653)

Weight to DT = R(Y)

where: Y = stem weight to 4-inch d.o.b. top; D = d.b.h. in inches;

Th = total height; Dt = 9-inches d.o.b.

Table 33.--Predicted green weight of wood, bark, and foliage in the crown^{1/} of longleaf pine^{2/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Pounds^{3/}</u>								
6	60	77	94	111	127			
7	84	107	130	153	176			
8	112	142	172	202	232			
9	144	182	220	258	296	334		
10	180	227	274	321	368	414		
11	219	276	333	390	446	503		
12	262	330	398	465	533	600	668	
13	309	389	468	547	626	706	785	
14	360	452	544	636	728	820	911	
15	414	520	625	731	836	942	1,047	1,153
16		593	713	833	953	1,073	1,193	1,313
17		670	805	941	1,077	1,212	1,348	1,483
18			904	1,056	1,208	1,360	1,512	1,664
19			1,008	1,177	1,347	1,516	1,685	1,854
20			1,118	1,305	1,493	1,680	1,868	2,056
21				1,233	1,440	1,647	1,853	2,060
22					1,354	1,581	1,808	2,035
23						1,729	1,977	2,225
24							2,423	2,693
								2,963

^{1/} Crown is the portion of the stem above 4-inches d.o.b. and branches.

^{2/} Blocked-in area indicates range of data.

^{3/} $Y = -7.58836 + 0.04689 (D^2 Th)$

where: Y = weight of crown; D = d.b.h. in inches;

Th = total height.

Table 34.--Predicted volume of stem to a 4-inch d.o.b. top (wood only)
for longleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Cubic feet^{2/}</u>								
6	2.3	3.0	3.8	4.6	5.4			
7	3.4	4.4	5.5	6.6	7.6			
8	4.7	6.1	7.5	8.8	10.2			
9	6.2	7.9	9.7	11.4	13.2	14.9		
10	7.8	10.0	12.1	14.3	16.4	18.6		
11	9.6	12.2	14.8	17.5	20.1	22.7		
12	11.6	14.7	17.8	20.9	24.0	27.2	30.3	
13	13.8	17.4	21.1	24.7	28.4	32.0	35.7	
14	16.1	20.3	24.6	28.8	33.0	37.3	41.5	
15	18.6	23.5	28.3	33.2	38.0	42.9	47.8	52.6
16		26.8	32.3	37.9	43.4	48.9	54.5	60.0
17		30.4	36.6	42.9	49.1	55.3	61.6	67.8
18			41.1	48.1	55.1	62.1	69.1	76.1
19			45.9	53.7	61.5	69.3	77.1	84.9
20			51.0	59.6	68.3	76.9	85.6	94.2
21			56.3	65.8	75.4	84.9	94.4	103.9
22			61.9	72.3	82.8	93.2	103.7	114.2
23				79.1	90.6	102.0	113.4	124.8
24				86.2	98.7	111.1	123.6	136.0

^{1/} Blocked-in area indicates range of data.

$$\underline{2/} \quad Y = -0.84281 + 0.00216 (D^2 Th)$$

where: Y = volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet.

Table 35.--Predicted volume of stem to a 7-inch d.o.b. top (wood only)
 for longleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	111
	<u>Cubic feet</u> ^{2/}							
8	2.2	2.8	3.5	4.1	4.8			
9	4.2	5.4	6.6	7.8	9.0	10.1		
10	6.2	8.0	9.7	11.4	13.1	14.9		
11	8.3	10.6	12.9	15.1	17.4	19.7		
12	10.5	13.4	16.2	19.0	21.9	24.7	27.5	
13	12.9	16.3	19.7	23.1	26.5	30.0	33.4	
14	15.3	19.4	23.4	27.5	31.5	35.5	39.6	
15	18.0	22.7	27.3	32.0	36.7	41.4	46.1	50.8
16		26.1	31.5	36.9	42.3	47.7	53.0	58.4
17		29.8	35.9	42.0	48.1	54.2	60.4	66.5
18			40.5	47.4	54.3	61.2	68.1	75.0
19			45.4	53.1	60.8	68.5	76.2	83.9
20			50.5	59.1	67.6	76.2	84.7	93.3
21			55.9	65.3	74.8	84.2	93.7	103.1
22			61.5	71.9	82.3	92.6	103.0	113.4
23				78.7	90.1	101.5	112.8	124.2
24				85.9	98.3	110.6	123.0	135.4

^{1/} Blocked-in area indicates range of data.

$$\underline{Y} = -0.84281 + 0.00216 (D^2 Th)$$

$$R = 1-0.682125 (D_t^4 \cdot 543282 / D^4 \cdot 369255)$$

Volume to D_t = $R(Y)$

where: Y = stem volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

D_t = 7 inches d.o.b.

Table 36.--Predicted volume of stem to a 9-inch d.o.b. top (wood only)
for longleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Cubic feet^{2/}</u>								
10	2.9	3.7	4.5	5.3	6.1	6.9		
11	5.6	7.1	8.7	10.2	11.7	13.2		
12	8.3	10.5	12.8	15.0	17.2	19.4	21.7	
13	11.0	13.9	16.8	19.8	22.7	25.6	28.5	
14	13.8	17.4	21.0	24.6	28.2	31.9	35.5	
15	16.6	20.9	25.3	29.6	34.0	38.3	42.6	47.0
16		24.6	29.7	34.8	39.9	45.0	50.0	55.1
17		28.5	34.3	40.2	46.0	51.9	57.8	63.6
18			39.2	45.8	52.5	59.1	65.8	72.5
19			44.2	51.7	59.2	66.7	74.2	81.7
20			49.4	57.8	66.2	74.6	82.9	91.3
21			54.9	64.2	73.5	82.8	92.1	101.4
22			60.6	70.9	81.1	91.4	101.6	111.9
23				77.8	89.1	100.3	111.5	122.8
24				85.1	97.3	109.6	121.9	134.1

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -0.84281 + 0.00216 (D^2 Th)$

$R = 1 - 0.682125 (Dt^{4.543282} / D^{4.369255})$

Volume to $Dt = R(Y)$

where: Y = stem volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 9 inches d.o.b.

Table 37.--Predicted board feet (Scribner) to 7-inch d.o.b. top for longleaf pine^{1/}

D.b.h. class (inches)	40	50	60	70	80	90	100	110	Total height (feet)	
									Board feet ^{2/}	
10	7	21	35	49	63	77				
11	19	36	53	69	86	103				
12	32	52	72	92	112	132	152			
13	46	69	93	116	140	164	187			
14	61	88	116	143	170	198	225			
15	77	108	140	171	203	234	266	297		
16		130	166	202	237	273	309	345		
17		153	194	234	274	315	355	396		
18			223	268	314	359	404	450		
19			254	305	355	406	456	507		
20			287	343	399	455	511	567		
21			321	383	445	506	568	630		
22			357	425	493	560	628	696		
23				469	543	617	691	765		
24				515	596	676	757	837		

^{1/} Blocked-in area indicates range of data.
^{2/} $Y = -49.016586 + 0.013990 (D^2 Th)$

where: Y = board feet to 7-inch d.o.b. top
 D = d.b.h. in inches
 Th = total height in feet.

Table 38.--Predicted green weight of sawtimber per MBF (Scribner) to a 7-inch d.o.b. top for longleaf pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Pounds/MBF^{2/3}</u>								
10	66,068	27,736	20,115	16,853	15,043	13,891		
11	32,751	21,705	17,775	15,761	14,535	13,711		
12	24,491	18,847	16,368	14,974	14,081	13,460	13,003	
13	20,691	17,150	15,413	14,381	13,697	13,210	12,847	
14	18,493	16,019	14,720	13,919	13,376	12,984	12,687	
15	17,057	15,209	14,194	13,551	13,108	12,784	12,537	12,342
16		14,602	13,782	13,253	12,884	12,612	12,402	12,236
17		14,131	13,452	13,008	12,695	12,462	12,282	12,139
18			13,183	12,804	12,535	12,333	12,177	12,052
19			12,960	12,632	12,397	12,221	12,084	11,974
20			12,772	12,486	12,279	12,124	12,003	11,905
21			12,613	12,360	12,177	12,039	11,931	11,843
22			12,477	12,252	12,088	11,964	11,867	11,789
23				12,157	12,010	11,898	11,810	11,740
24				12,075	11,942	11,840	11,760	11,696

^{1/} Blocked-in area indicates range of data.

$$Y = -36.83043 + 0.15608 (D^2 Th)$$

$$R = 1.0 - 0.647787 (Dt^{4.321359} / D^{4.122653})$$

Weight to Dt = R(Y)

where: Y = stem weight to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b. top.

$$\underline{3/} \quad BF = -49.01659 + 0.01399 (D^2 Th).$$

Table 39.--Predicted green weight of pulpwood from 7-inch d.o.b. top to 4-inch d.o.b. top per MBF (Scribner) for longleaf pine^{1/}

D.b.h. class (inches)	40	50	60	70	80	90	Total height (feet)	
							100	110
							<u>Pounds/MBF^{2/3/}</u>	
10	18,543	7,785	5,646	4,730	4,222	3,899		
11	5,687	3,769	3,086	2,737	2,524	2,381		
12	2,823	2,172	1,887	1,726	1,623	1,551	1,499	
13	1,661	1,377	1,237	1,154	1,099	1,060	1,031	
14	1,071	928		852	806	775	752	735
15	733	653		610	582	563	549	539
16		476		449	432	420	411	404
17		356		339	328	320	314	310
18			261	254	248	244	241	239
19			205	199	196	193	191	189
20			163	159	156	154	153	152
21			131	128	127	125	124	123
22			107	105	104	102	102	101
23				87	86	85	84	84
24				72	71	71	70	70

^{1/} Blocked-in area indicates range of data.

$$\frac{2/}{2/} Y = -36.83043 + 0.15608 (D^2 Th)$$

$$R = 1.0 - 0.647787 (Dt^{4.321359} / D^{4.122653})$$

Weight to Dt = R(Y)

Pulpwood weight = Y(1-R)

where: Y = stem weight to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b. top.

$$\frac{3/}{3/} BF = -49.01659 + 0.01399 (D^2 Th).$$

Table 40.--Predicted rough cords to a 4-inch d.o.b. top for longleaf pine^{1/2/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	^{3/} Cords							
6	0.041	0.051	0.061	0.070	0.080			
7	.059	.073	.086	.100	.114			
8	.076	.094	.112	.130	.148			
9	.094	.117	.140	.162	.185	0.208		
10	.113	.141	.168	.196	.224	.251		
11	.134	.167	.200	.233	.266	.299		
12	.157	.195	.234	.272	.310	.349	0.387	
13	.181	.225	.270	.314	.359	.403	.448	
14	.206	.257	.308	.359	.410	.461	.512	
15	.234	.291	.349	.407	.465	.522	.580	0.638
16		.327	.392	.457	.522	.587	.652	.717
17		.366	.438	.511	.584	.656	.729	.802
18			.486	.567	.648	.728	.809	.889
19			.537	.626	.715	.804	.893	.982
20			.590	.688	.785	.883	.981	1.079
21				.646	.753	.860	.967	1.074
22				.704	.820	.937	1.054	1.171
23					.888	1.015	1.141	1.268
24					.957	1.094	1.230	1.367
								1.503

^{1/} Blocked-in area indicates range of data.

$$Y = 16.68358 + 0.15492 (D^2 Th)$$

$$R = 1 - 1.082611 (Dt^{3.797014} / D^{3.843388})$$

Weight to Dt = R(Y)

where: Y = total stem weight; D = d.b.h. in inches; Th = total height;

Dt = 4 inches d.o.b.; R = merchantable weight to Dt/total stem weight.

^{2/} Cords = (wt. to Dt/wt. factor)/cubic feet per cord factor

where: wt. factor = 74.52 pounds per cubic foot; cubic feet per cord factor varies with d.b.h. class. Source: USDA Forest Serv. Res. Bul. SE-27, Asheville, NC.

SECTION IV

SLASH PINE YIELD TABLES



Table 41.--Predicted green weight of total tree (wood, bark, and foliage)
for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
6	244	312	379	447	514			
7	342	433	525	617	709			
8	454	574	694	814	934			
9	581	733	885	1,037	1,188	1,340		
10	724	911	1,098	1,286	1,473	1,660		
11	881	1,108	1,335	1,561	1,788	2,015		
12	1,053	1,323	1,593	1,863	2,133	2,402	2,672	
13	1,241	1,557	1,874	2,191	2,507	2,824	3,140	
14	1,443	1,810	2,178	2,545	2,912	3,279	3,646	
15	1,660	2,082	2,504	2,925	3,347	3,768	4,190	4,611
16		2,372	2,852	3,332	3,811	4,291	4,770	5,250
17		2,681	3,223	3,764	4,306	4,847	5,389	5,930
18			3,616	4,223	4,830	5,437	6,044	6,651
19			4,032	4,708	5,385	6,061	6,737	7,414
20			4,471	5,220	5,969	6,719	7,468	8,217
21			4,931	5,758	6,584	7,410	8,236	9,062
22			5,415	6,321	7,228	8,135	9,042	9,948
23				6,912	7,903	8,894	9,885	10,876
24				7,528	8,607	9,686	10,765	11,844

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -25,58159 + 0.18734 (D^2 Th)$

where: Y = total tree weight

D = d.b.h. in inches

Th = total height in feet.

Table 42.--Predicted green weight of wood and bark to a 4-inch d.o.b. top
for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
6	164	218	273	328	383			
7	243	317	392	467	541			
8	334	432	529	627	724			
9	438	561	685	808	931	1,055		
10	554	706	858	1,010	1,163	1,315		
11	681	866	1,050	1,234	1,419	1,603		
12	822	1,041	1,260	1,480	1,699	1,918	2,138	
13	974	1,231	1,489	1,746	2,004	2,261	2,518	
14	1,138	1,437	1,736	2,034	2,333	2,631	2,930	
15	1,315	1,658	2,001	2,343	2,686	3,029	3,371	3,714
16		1,894	2,284	2,674	3,064	3,454	3,844	4,234
17		2,145	2,585	3,026	3,466	3,906	4,346	4,786
18			2,905	3,399	3,892	4,386	4,879	5,373
19			3,243	3,793	4,343	4,893	5,443	5,993
20			3,600	4,209	4,818	5,428	6,037	6,646
21			3,975	4,646	5,318	5,990	6,662	7,333
22			4,368	5,105	5,842	6,579	7,317	8,054
23				5,585	6,390	7,196	8,002	8,808
24				6,086	6,963	7,840	8,718	9,595

^{1/} Blocked-in area indicates range of data.

$$\frac{2}{2} Y = -55.76662 + 0.15232 (D^2 Th)$$

where: Y = stem weight to 4-inches d.o.b. top;

D = d.b.h. in inches

Th = total height.

Table 43.--Predicted green weight of wood and bark to a 7-inch d.o.b. top
for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Pounds^{2/}</u>								
8	121	156	191	226	261			
9	271	347	423	499	576	652		
10	420	536	651	767	883	998		
11	573	728	883	1,038	1,193	1,348		
12	732	928	1,123	1,319	1,514	1,710	1,905	
13	899	1,137	1,375	1,612	1,850	2,088	2,326	
14	1,075	1,357	1,639	1,921	2,203	2,485	2,767	
15	1,261	1,590	1,919	2,247	2,576	2,905	3,233	3,562
16		1,835	2,213	2,591	2,969	3,347	3,725	4,103
17		2,094	2,524	2,954	3,384	3,813	4,243	4,673
18			2,852	3,336	3,820	4,305	4,789	5,274
19			3,196	3,738	4,280	4,822	5,364	5,905
20			3,558	4,160	4,762	5,364	5,967	6,569
21			3,937	4,603	5,268	5,933	6,599	7,264
22			4,334	5,066	5,797	6,529	7,260	7,992
23				5,549	6,350	7,151	7,951	8,752
24				6,054	6,927	7,799	8,672	9,545

^{1/} Blocked-in area indicates range of data.

$$\underline{2/} \quad Y = -55.76662 + 0.15232 (D^2 Th)$$

$$R = 1 - 1.815902 (Dt^{4.133251} / D^{4.370086})$$

Weight to Dt = R(Y)

where: Y = stem weight to 4-inches d.o.b. top; D = d.b.h. in inches;
Th = total height; Dt = 7 inches d.o.b.

Table 44.--Predicted green weight of wood and bark to a 9-inch d.o.b. top
for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds^{2/}</u>							
10	177	225	274	322	371	420		
11	375	477	579	680	782	883		
12	569	721	873	1,025	1,117	1,329	1,481	
13	763	965	1,167	1,368	1,570	1,772	1,974	
14	960	1,212	1,464	1,716	1,968	2,219	2,471	
15	1,163	1,466	1,769	2,072	2,375	2,678	2,981	3,284
16		1,729	2,084	2,440	2,796	3,152	3,508	3,864
17		2,002	2,412	2,823	3,234	3,644	4,055	4,466
18			2,754	3,221	3,689	4,157	4,625	5,093
19			3,110	3,637	4,164	4,691	5,219	5,746
20			3,481	4,071	4,660	5,249	5,838	6,427
21			3,869	4,523	5,177	5,830	6,484	7,138
22			4,273	4,994	5,715	6,436	7,158	7,879
23				5,485	6,276	7,068	7,859	8,650
24				5,995	6,860	7,724	8,588	9,453

^{1/} Blocked-in area indicates range of data.

$$Y = -55.76662 + 0.15232 (D^2 Th)$$

$$R = 1 - 1.815902 (Dt^{4.133251} / D^{4.370086})$$

Weight to Dt = R(Y)

where: Y = stem weight to 4-inch d.o.b. top; D = d.b.h. in inches;
Th = total height; Dt = 9-inches d.o.b.

Table 45.--Predicted green weight of wood, bark, and foliage in the crown^{1/}
of slash pine^{2/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	^{3/} Pounds							
6	81	93	106	118	131			
7	99	116	133	150	167			
8	120	142	165	187	209			
9	144	172	200	229	257	285		
10	170	205	240	275	310	345		
11	200	242	284	327	369	412		
12	232	282	333	383	434	484	534	
13	267	326	385	444	504	563	622	
14	305	373	442	511	579	648	717	
15	345	424	503	582	661	739	818	897
16		478	568	658	747	837	927	1,016
17		536	637	739	840	941	1,042	1,143
18			711	824	938	1,051	1,165	1,278
19			789	915	1,042	1,168	1,294	1,421
20			871	1,011	1,151	1,291	1,431	1,571
21			957	1,111	1,266	1,420	1,575	1,729
22			1,047	1,217	1,386	1,556	1,725	1,895
23				1,327	1,512	1,697	1,883	2,068
24				1,442	1,644	1,846	2,047	2,249

^{1/} Crown is the portion of the stem above 4-inches d.o.b. and branches.

^{2/} Blocked-in area indicates range of data.

^{3/} $Y = 30.18503 + 0.03502 (D^2 Th)$

where: Y = weight of crown; D = d.b.h. in inches;

Th = total height.

Table 46.--Predicted volume of stem to a 4-inch d.o.b. top (wood only)
for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Cubic feet^{2/}</u>								
6	2.1	2.9	3.6	4.4	5.2			
7	3.2	4.2	5.3	6.3	7.4			
8	4.5	5.8	7.2	8.6	10.0			
9	5.9	7.7	9.4	11.1	12.9	14.6		
10	7.6	9.7	11.8	14.0	16.1	18.3		
11	9.4	11.9	14.5	17.1	19.7	22.3		
12	11.3	14.4	17.5	20.6	23.7	26.7	29.8	
13	13.5	17.1	20.7	24.3	27.9	31.6	35.2	
14	15.8	20.0	24.2	28.4	32.6	36.8	40.9	
15	18.3	23.1	27.9	32.7	37.5	42.3	47.2	52.0
16		26.4	31.9	37.4	42.8	48.3	53.8	59.3
17		29.9	36.1	42.3	48.5	54.7	60.8	67.0
18			40.6	47.5	54.5	61.4	68.3	75.3
19			45.4	53.1	60.8	68.5	76.3	84.0
20			50.4	58.9	67.5	76.0	84.6	93.2
21			55.6	65.1	74.5	83.9	93.4	102.8
22			61.1	71.5	81.9	92.2	102.6	112.9
23				78.2	89.6	100.9	112.2	123.5
24				85.3	97.6	109.9	122.3	134.6

^{1/} Blocked-in area indicates range of data.

^{2/} $Y = -0.99865 + 0.00214 (D^2 Th)$

where: Y = volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet.

Table 47.--Predicted volume of stem to a 7-inch d.o.b. top (wood only)
for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Cubic feet^{2/}</u>								
8	1.7	2.3	2.8	3.3	3.8			
9	3.8	4.9	6.1	7.2	8.3	9.4		
10	5.9	7.6	9.3	10.9	12.6	14.3		
11	8.1	10.3	12.5	14.7	17.0	19.2		
12	10.3	13.1	15.9	18.7	21.5	24.2	27.0	
13	12.6	16.0	19.4	22.8	26.1	29.5	32.9	
14	15.1	19.1	23.1	27.1	31.1	35.1	39.1	
15	17.7	22.3	27.0	31.6	36.3	40.9	45.6	50.3
16		25.7	31.1	36.4	41.8	47.1	52.5	57.8
17		29.4	35.4	41.5	47.6	53.7	59.7	65.8
18			40.0	46.9	53.7	60.5	67.4	74.2
19			44.9	52.5	60.1	67.8	75.4	83.1
20			49.9	58.4	66.9	75.4	83.9	92.4
21			55.2	64.6	74.0	83.4	92.7	102.1
22			60.8	71.1	81.4	91.7	102.0	112.3
23				77.9	89.2	100.4	111.7	123.0
24				85.0	97.3	109.5	121.8	134.1

^{1/} Blocked-in area indicates range of data.

^{2/} Y = $-0.99365 + 0.00214 (D^2 Th)$

R = $1 - 1.871397 (Dt^{4.397359} / D^{4.651165})$

Volume to Dt = R(Y)

where: Y = stem volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b.

Table 48.--Predicted volume of stem to a 9-inch d.o.b. top (wood only)
for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Cubic feet^{2/}</u>							
10	2.6	3.3	4.1	4.8	5.5	6.3		
11	5.4	6.9	8.4	9.9	11.4	12.9		
12	8.1	10.4	12.6	14.8	17.0	19.2	21.4	
13	10.9	13.8	16.7	19.6	22.5	25.4	28.4	
14	13.6	17.2	20.9	24.5	28.1	31.7	35.3	
15	16.4	20.8	25.1	29.4	33.8	38.1	42.5	46.8
16		24.4	29.5	34.6	39.7	44.7	49.8	54.9
17		28.3	34.1	39.9	45.8	51.6	57.5	63.3
18			38.9	45.5	52.1	58.8	65.4	72.1
19			43.8	51.3	58.8	66.3	73.7	81.2
20			49.0	57.4	65.7	74.1	82.4	90.7
21			54.5	63.7	72.9	82.2	91.4	100.7
22			60.1	70.3	80.5	90.7	100.9	111.0
23				77.2	88.3	99.5	110.7	121.8
24				84.3	96.5	108.7	120.9	133.1

^{1/} Blocked-in area indicates range of data.

$$\underline{2/} \quad Y = -0.99865 + 0.00214 (D^2 Th)$$

$$R = 1 - 1.871397 (Dt^{4.397359} / D^{4.651165})$$

$$\text{Volume to } Dt = R(Y)$$

where: Y = stem volume to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 9 inches d.o.b.

Table 49.--Predicted board feet (Scribner) to 7-inch d.o.b. top for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
<u>Board feet^{2/}</u>								
10	4	18	32	46	60	74		
11	16	33	50	67	84	101		
12	29	49	69	89	110	130	150	
13	43	67	90	114	138	162	185	
14	58	86	113	141	168	196	223	
15	74	106	138	169	201	232	264	296
16		128	164	200	236	272	308	343
17		151	191	232	273	313	354	394
18			221	266	312	358	403	449
19			252	303	354	404	455	506
20			285	341	397	454	510	566
21			320	382	444	505	567	629
22			356	424	492	560	628	696
23				468	542	617	691	765
24				514	595	676	757	838

^{1/} Blocked-in area indicates range of data.

$$\underline{2/} \quad Y = -52.155640 + 0.014050 (D^2 Th)$$

where: Y = board feet to 7-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet.

Table 50.--Predicted green weight of sawtimber per MBF (Scribner) to a 7-inch d.o.b. top for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds/MBF^{2/3}</u>							
10	29,608	20,263	16,603	14,650	13,435			
11	36,171	22,170	17,719	15,531	14,231	13,369		
12	25,453	18,934	16,225	14,741	13,805	13,160	12,689	
13	21,002	17,081	15,222	14,138	13,427	12,925	12,551	
14	18,542	15,869	14,499	13,665	13,104	12,701	12,398	
15	16,976	15,012	13,951	13,287	12,832	12,501	12,249	12,051
16		14,375	13,524	12,981	12,603	12,325	12,112	11,944
17		13,882	13,183	12,728	12,409	12,173	11,990	11,846
18			12,905	12,518	12,244	12,040	11,882	11,756
19			12,675	12,341	12,103	11,925	11,787	11,676
20			12,482	12,191	11,982	11,825	11,703	11,605
21			12,319	12,062	11,877	11,738	11,629	11,541
22			12,179	11,951	11,786	11,661	11,563	11,485
23				11,855	11,706	11,594	11,505	11,434
24				11,770	11,636	11,534	11,454	11,389

^{1/} Blocked-in area indicates range of data.

$$\underline{2/} \quad Y = -55.76662 + 0.15232 (D^2 Th)$$

$$R = 1.0 - 1.815902 (Dt^4 \cdot 133251 / D^4 \cdot 370086)$$

Weight to Dt = R(Y)

where: Y = stem weight to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in inches

Dt = 7 inches d.o.b. top.

$$\underline{3/} \quad BF = -52.15564 + 0.01405 (D^2 Th)$$

Table 51.--Predicted green weight of pulpwood from 7-inch d.o.b. top to 4-inch d.o.b. top per MBF (Scribner) for slash pine^{1/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Pounds/MBF^{2/3}</u>							
10		9,401	6,434	5,272	4,652	4,266		
11	6,833	4,188	3,347	2,934	2,689	2,526		
12	3,102	2,308	1,977	1,797	1,682	1,604	1,546	
13	1,741	1,416	1,262	1,172	1,113	1,072	1,041	
14	1,087	931	850	801	768	745	727	
15	725	641	596	568	548	534	523	515
16		458	431	414	402	393	386	381
17		337	320	309	301	296	291	288
18		243	236	230	227	224	221	
19		188	183	179	176	174	173	
20		147	144	141	139	138	137	
21		117	115	113	112	111	110	
22		94	93	91	90	90	89	
23			75	75	74	73	73	
24			62	61	61	60	60	

^{1/} Blocked-in area indicates range of data.

$$Y = -55.76662 + 0.15232 (D^2 Th)$$

$$R = 1.0 - 1.815902 (Dt^4 \cdot 133251 / D^4 \cdot 370086)$$

Weight to Dt = R(Y)

Pulpwood weight = Y(1-R)

where: Y = stem weight to 4-inch d.o.b. top

D = d.b.h. in inches

Th = total height in feet

Dt = 7 inches d.o.b. top

$$BF = -52.15564 + 0.01405 (D^2 Th)$$



3 2108 04449 2695

Table 52.--Predicted rough cords to a 4-inch d.o.b. top for slash pine^{1/2/}

D.b.h. class (inches)	Total height (feet)							
	40	50	60	70	80	90	100	110
	<u>Cords</u> ^{3/}							
6	0.037	0.046	0.055	0.065	0.074			
7	.054	.068	.082	.095	.109			
8	.072	.090	.108	.126	.144			
9	.090	.113	.136	.158	.181	0.203		
10	.110	.137	.164	.192	.219	.247		
11	.131	.163	.196	.229	.262	.294		
12	.153	.191	.229	.268	.306	.344	0.383	
13	.177	.221	.266	.310	.354	.398	.443	
14	.203	.253	.304	.355	.405	.456	.507	
15	.230	.287	.345	.402	.460	.517	.575	0.632
16		.323	.387	.452	.517	.581	.646	.711
17		.361	.434	.506	.578	.651	.723	.795
18			.481	.562	.642	.722	.802	.882
19				.531	.620	.709	.797	.886
20					.584	.682	.779	.876
21						.640	.747	.853
22						.698	.814	.930
23							.882	1.007
24								.950
								1.086
								1.222
								1.357
								1.493

^{1/} Blocked-in area indicates range of data.

^{2/}
$$Y = -0.87671 + 0.15121 (D^2 Th)$$

$$R = 1 - 1.598457 (Dt^{3.845876} / D^4 \cdot 031823)$$

Weight to Dt = R(Y)

where: Y = total stem weight; D = d.b.h. in inches; TH = total height;

Dt = 4 inches d.o.b.; R = merchantable weight to Dt/total stem weight.

^{3/} Cords = (wt. to Dt/wt. factor)/cubic feet per cord factor

where: wt. factor = 73.09 pounds per cubic foot; cubic feet per cord factor varies with d.b.h. class. Source: USDA Forest Serv. Res. Bul. SE-27, Asheville, NC.



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Cost \$5,715
Quantity 6,000